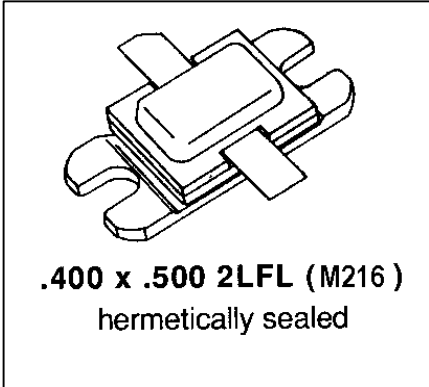


**MSC1450M**

**RF AND MICROWAVE TRANSISTORS  
AVIONICS APPLICATIONS**

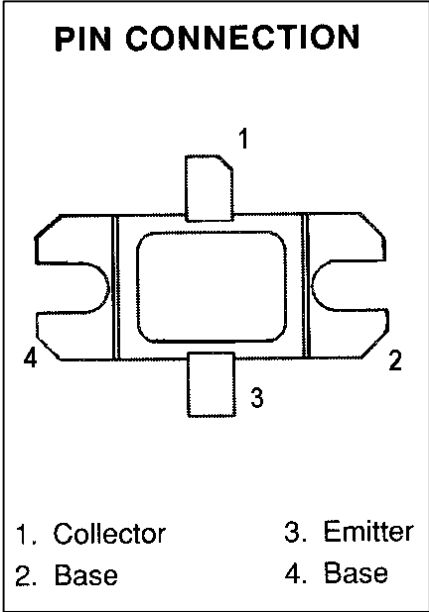
**Features**

- REFRACTORY/GOLD METALLIZATION
- LOW THERMAL RESISTANCE
- RUGGEDIZED VSWR 25:1
- INTERNAL INPUT / OUTPUT MATCHING
- METAL/CERAMIC HERMETIC PACKAGE
- P<sub>OUT</sub> = 450 W MINIMUM
- 7 dB gain



**DESCRIPTION:**

The MSC1450M is a high-power pulsed transistor specifically designed for IFF avionics applications. This device is capable of withstanding a minimum 25:1 load mismatch at any phase angle under full rated conditions. The MSC1450M is housed in the unique BIGPAC™ package with internal input/output matching structures.



**ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)**

Symbol	Parameter	Value	Unit
V <sub>CC</sub>	Collector-Supply Voltage	55	V
I <sub>C</sub>	Device Current	28	A
P <sub>DISS</sub>	Power Dissipation	910	W
T <sub>J</sub>	Junction Temperature	250	°C
T <sub>STG</sub>	Storage Temperature	- 65 to + 200	°C

**Thermal Data**

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	0.15	°C/W
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**ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)**
**STATIC**

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
<b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub> = 15 mA    I<sub>E</sub> = 0 mA</b>	<b>65</b>			<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 1 mA    I<sub>C</sub> = 0 mA</b>	<b>3.5</b>			<b>V</b>
<b>BV<sub>CER</sub></b>	<b>I<sub>C</sub> = 50 mA    R<sub>BE</sub> = 10Ω</b>	<b>65</b>			<b>V</b>
<b>I<sub>CES</sub></b>	<b>V<sub>CE</sub> = 50V</b>			<b>35</b>	<b>mA</b>
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V    I<sub>C</sub> = 1 A</b>	<b>15</b>		<b>120</b>	

**DYNAMIC**

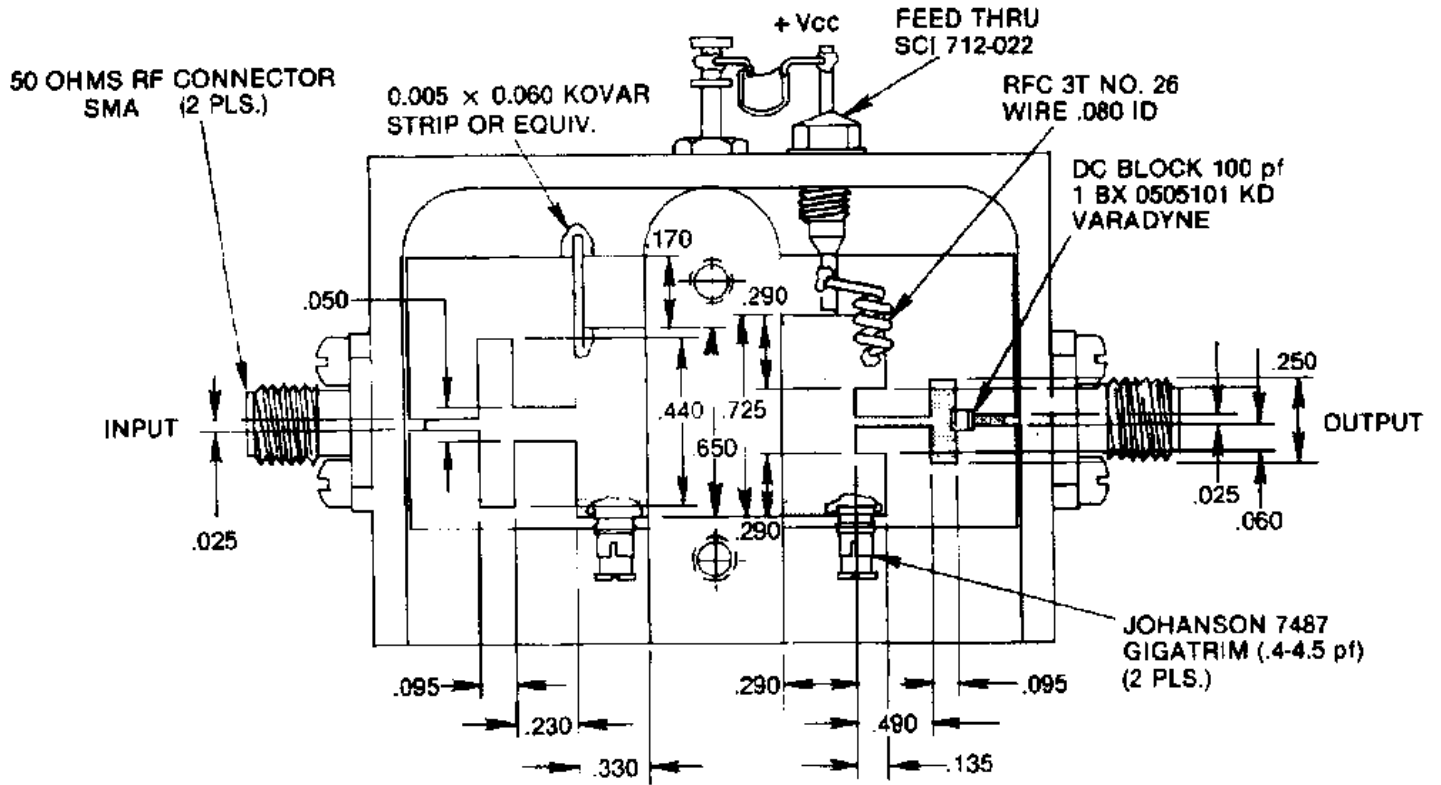
Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 1090 MHz    P<sub>IN</sub> = 90 W    V<sub>CC</sub> = 50 V</b>	<b>450</b>	<b>500</b>		<b>W</b>
<b>ζ<sub>C</sub></b>	<b>f = 1090 MHz    P<sub>IN</sub> = 90 W    V<sub>CC</sub> = 50 V</b>	<b>40</b>			<b>%</b>
<b>G<sub>P</sub></b>	<b>f = 1090 MHz    P<sub>IN</sub> = 90 W    V<sub>CC</sub> = 50 V</b>	<b>7</b>			<b>dB</b>

Note:    Pulse width = 10μSec  
           Duty Cycle = 1%

**MSC1450M**

TEST CIRCUIT

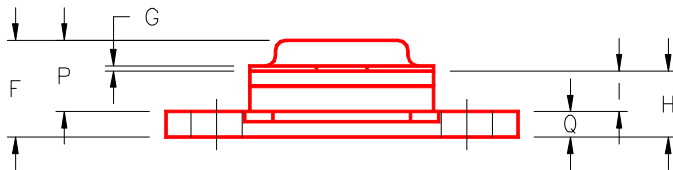
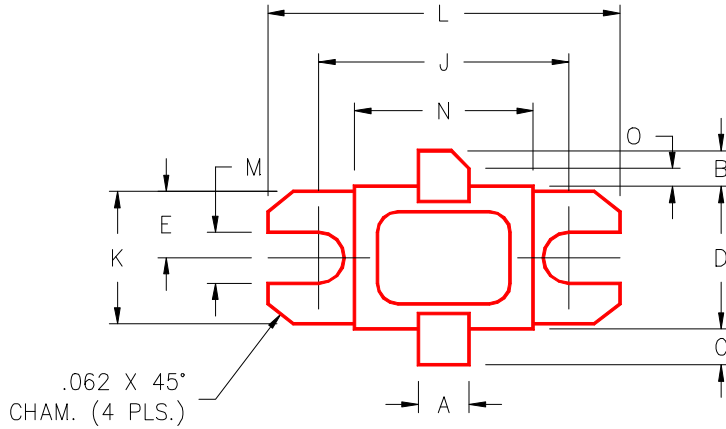
Ref.: Dwg. No. C125363



All dimensions are in inches.

**PACKAGE MECHANICAL DATA**

**PACKAGE STYLE M216**



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.140/3,56		J	.700/17,78	
B	.110/2,80		K	.386/9,80	
C	.110/2,80		L	.900/22,86	
D	.395/10,03	.407/10,34	M	.120/3,05	
E	.193/4,90		N	.500/12,70	
F		.230/5,84	O	.050/1,27	
G	.003/0,08	.006/0,15	P		.170/4,32
H	.118/3,00	.131/3,33	Q	.062/1,58	
I	.063/1,60				